IN THE CLAIMS

Please amend the claims as follows.

1. (Currently Amended) A method for improving performance sensitivity and facility of operation of an array including ~~one or more~~ microbolometers, comprising:

applying ~~two or more~~ N bias pulses substantially sequentially during a frame time to each microbolometer in the array, wherein N is 2 or greater, and wherein the N bias pulses have a shorter time duration and frequency, selected to reduce microbolometer temperature variation and noise compared to a time duration of prior single pulses;

measuring ~~two or more~~ N resulting signals corresponding to the ~~two or more~~ N bias pulses, wherein the signal resulting from the rise in temperature caused by the N bias pulses is less than the signal resulting from incident infrared radiation;

computing an average signal value from the ~~two or more~~ N resulting signals corresponding to each microbolometer in the array during the frame time; and

producing an output signal based on the computed average signal value for each microbolometer in the array during the frame time.

2. (Previously Presented) The method of claim 1, further comprising:

repeating the applying, measuring, computing, and producing steps to compute output signals during each frame time.

3. (Currently Amended) The method of claim 2, further comprising:

applying a corrective electrical signal to the output signal to correct for resistance non-uniformity between the ~~one or more~~ microbolometers in the array to obtain a substantially uniform output signal value.

4. (Previously Presented) The method of claim 3, further comprising:

converting the substantially uniform output signal value associated with each microbolometer in the array to a digital signal value.

5. (Previously Presented) The method of claim 4, further comprising:

passing the digital signal value associated with each microbolometer in the array through a digital image processor to correct for image defects.

6. (Previously Presented) The method of claim 5, wherein the image defects comprises:

image defects selected from the group consisting of fine offsets, gain non-uniformity, and dead pixels.

7. (Original) The method of claim 1, wherein the bias pulses are substantially equal in magnitude.

8. (Original) The method of claim 1, wherein the bias pulses are substantially equally spaced in time.

9. (Currently Amended) The method of claim 1, wherein the ~~two or more~~ bias pulses comprise:

~~two or more~~ voltage bias pulses.

10. (Currently Amended) The method of claim 1, wherein the ~~two or more~~ N resulting signals comprises:

~~two or more~~ N current signals.

11. (Currently Amended) The method of claim 1, wherein ~~the bias pulses are~~ N is in the range of about 2 to 100 bias pulses.

12. (Currently Amended) The method of claim 1, wherein each of the ~~two or more~~ N bias pulses has a time duration in the range of about 0.1 to 20 microseconds.

13. (Cancelled) The method of claim 1, wherein the frame time is the time it takes for the array to produce a complete image of an object being viewed by the array.

14. (Currently Amended) An infrared radiation detector apparatus, comprising:

microbolometers in an array;

a timing circuit coupled to the array to apply ~~two or more~~ N bias pulses substantially sequentially to each microbolometer in the array during a frame time in a manner consistent with fast scanning;

a measuring circuit coupled to the array to measure ~~two or more~~ N resulting signals associated with each of the applied ~~two or more~~ N bias pulses during the frame time;

a computing circuit coupled to the measuring circuit to compute an average signal value for each microbolometer in the array from the measured ~~two or more~~ N resulting signals during the frame time; and

an output circuit coupled to the computing circuit to produce an output signal based on the computed average signal value for each microbolometer in the array during the frame time.

15. (Previously Presented) The apparatus of claim 14, wherein the output circuit further comprises:

an integrator and an A/D converter wherein said output signal produced is a digital signal value for each microbolometer in the array.

16. (Previously Presented) The apparatus of claim 15, further comprising:

a digital image processor, coupled to the output circuit to receive the digital signal value associated with each microbolometer of the array and correct the received digital signal value for image defects.

17. (Previously Presented) The apparatus of claim 16, wherein the digital image processor further comprises:

a correction circuit, to apply a corrective electrical signal based on a correction value to the output signal to correct for resistance non-uniformity in each microbolometer to obtain a uniform output signal value.

18. (Previously Presented) The apparatus of claim 17, wherein the correction circuit further corrects the uniform output signal value for fine offsets, gain non-uniformity, or dead pixels.

19. (Previously Presented) The apparatus of claim 18, wherein the digital image processor further comprises:

digital memories to store the correction values for each microbolometer in the array.

20. (Currently Amended) The apparatus of claim 14, wherein the ~~two or more~~ N bias pulses are substantially equal in magnitude.

21. (Currently Amended) The apparatus of claim 20, wherein the ~~two or more~~ N pulses are substantially equally spaced in time.

22. (Currently Amended) The apparatus of claim 14, wherein the ~~two or more~~ N bias pulses are voltage bias pulses.

23. (Original) The apparatus of claim 22, wherein the resulting signals are current signals.

24. (Currently Amended) The apparatus of claim 14, wherein the ~~two or more~~ N bias pulses are in the range of about 2 to 100 bias pulses.

25. (Currently Amended) The apparatus of claim 24, wherein the ~~two or more~~ N bias pulses have time duration in the range of about 0.1 to 20 microseconds.

26. (Cancelled).

27. (Currently Amended) A signal processing electronics circuit for an array including ~~one or more~~ microbolometers, comprising:

a timing circuit coupled to the array to apply ~~two or more~~ N bias pulses substantially sequentially to each microbolometer in the array such that the resulting temperature in each microbolometer in the array due to the application of the bias pulses is less than the temperature increase from incident infrared radiation ~~is substantially uniform~~ during a frame time;

a measuring circuit coupled to the array to measure ~~two or more~~ N resulting signals, respectively associated with each of the applied bias pulses during the frame time;

a computing circuit coupled to the measuring circuit to compute an average signal value for each microbolometer in the array from the measured resulting signals during the frame time; and

an output circuit coupled to the computing circuit to produce an output signal based on the computed average signal value for each microbolometer in the array during the frame time.

28. (Canceled).

29. (Previously Presented) The circuit of claim 27, wherein the output circuit further comprises:

an integrator and an A/D converter wherein said output signal produced is a digital signal value for each microbolometer in the array.

30. (Previously Presented) The circuit of claim 29, further comprising:

a digital image processor coupled to the output circuit to receive the digital signal value associated with each microbolometer to correct for image defects such as fine offsets, gain non-uniformity or dead pixels.

31. (Previously Presented) The circuit of claim 30, wherein the digital image processor further comprises:

a correction circuit to apply a corrective electrical signal based on a correction value to the output signal to correct for any resistance non-uniformity in each microbolometer to obtain a uniform output signal value.

32. (Previously Presented) The circuit of claim 31, further comprising:

a memory to store the correction value associated with each microbolometer in the array.

33. (Currently Amended) The circuit of claim 27, wherein the ~~two or more~~ N bias pulses are substantially equal in magnitude.

34. (Currently Amended) The circuit of claim 33, wherein the ~~two or more~~ N bias pulses are substantially equally spaced in time.

35. (Currently Amended) The circuit of claim 27, wherein the ~~two or more~~ N bias pulses are voltage bias pulses.

36. (Previously Presented) The circuit of claim 35, wherein the resulting signals are current signals.

37. (Currently Amended) The circuit of claim 27, wherein the ~~two or more~~ N bias pulses are in the range of about 2 to 100 bias pulses.

38. (Currently Amended) The circuit of claim 37, wherein the ~~two or more~~ N bias pulses have time duration in the range of about 0.1 to 20 microseconds.

39. (Cancelled).